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Telecommunications

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JPRS-TTP-89-011 23 August 1989

CONTENTS

FRANCE

SWEDEN

UNITED KINGDOM

GEC-Plessey Installs Fiber Optic Telecommunication System in Hunan

MI890316 Coburg OPTO ELEKTRONIK MAGAZIN in German Vol 5 No 2, Mar 89 p 114

[Text] A fiber optic telecommunications system costing about DM2.5 million was recently installed by GPT (GEC Plessey Telecommunications) in Changsha, capital of Hunan Province in the PRC.

The 140-Mbit capacity allows up to 4,000 telephone connections between Changsha, which has a population of 3 million, and the city of Xsiangtan, 50 km further south.

Just a month passed between this latest success of the company and the first fiber optic link GPT set up between China and Hong Kong.

Gary Head, executive director of GPT Network Systems, says: "The PRC's modernization program embraces all aspects of telecommunications. By installing fiber optic systems, the country has created an infrastructure which in all likelihood will meet future requirements for a long time to come."

"By installing this system, we have laid an excellent foundation for ourselves in China, on which we hope to build further in the future." The Hunan order was placed with the Hunan Province Import Corporation. The system is operated by the Hunan Post and Telecommunications Administration.

ALGERIA

Algeria Purchasing Continent's Largest Mobile Phone Net

55002482 Helsinki HUFVUDSTADSBLADET in Swedish 19 Jul 89 p 4

[Text] Telenokia is going to deliver an NMT-900 mobile phone system for Algeria's telecommunications network. It is the company's Cellular System unit which—in a record time of 6 months—is going to handle the project. The goal is to have the system in operation in Algiers before the end of the year. This mobile phone network will be the largest of its type in Africa. In addition to delivering the equipment, Telenokia is also responsible for the planning and installing of the net. At the client's wish, the cost of the deal has not been revealed. Withing the next few years, however, Algeria is going to invest tens of millions of markkas in the net. Telenokia has recently sold a mobile phone system also to Turkey and France. Finlands's Exportkredit Ab [Export Guarantee Fund] has granted a credit to the purchaser's bank. This is the first time the company is providing credits to Algeria.

INDIA

Self-Reliance in Insat Affair Suggested

BK0608113589 Delhi PATRIOT in English 26 Jul 89 p 4

[Editorial: "After Insat-1D"]

[Text] The American failure to put into orbit Insat-1D, damaged while being hoisted onto the Delta launch vehicle at Cape Canaveral on June 20, has put India in a serious quandary. The launch has been indefinitely delayed as experts go about appraising the damage, repairing the satellite, and fixing test plans and fresh launch date. This has cast a dark shadow of uncertainty on India's entire telecom channels, meteorological data collection work and TV programming.

The Insat-1D mishap has also required India to shop desperately in international market for satellite channels and time. A deal with Arabsat, a satellite of Arab consortium, is in the offing, but going by the current price of 3.5 million US dollar for one transponder for a year, India may end up forking out huge amounts to keep its telecom lines and TV channels working. These are at the moment being maintained by 12 transponders of Insat-1B, six of Insat-1C and two of Intelsat. With working life of Insat-1B and the Intelsat contract both expected to come to an end around October, the country would be left with only six transponders of Insat-1C, now working at half its capacity. A crisis seems inevitable. And responsibility for it fully lies with the US firm, Ford Aerospace, which fabricated all the four jinxed satellites in the Insat-1 series. The last of the four, was designed to provide a vital link between Insat-1s and the seven-part Insat-2, which ISRO [Indian Space Research Organization] plans to manufacture on its own in the 90s. The US-manufactured Insat-1 series cost a total of Rs [rupees] 564 crore. The indigenous production of Insat-2 series of seven satellites is expected to cost about Rs 420 crore and provide 50 percent more facilities. Commendable though the effort at self-reliance would be, the country meanwhile seems destined to go through a difficult period, since no back-up facilities exist for the damaged Insat-1D. The failures of the four US-made satellites to function normally have cost the country dearly, though some money has been recovered from insurance companies.

The lesson to learn from the experience stresses self-reliance in crucial matters. India has developed the requisite scientific expertise in the field, and the effort should be pursued vigorously.

Satellite Support Lags Behind Telecom Expansion

55500101 Bombay THE TIMES OF INDIA in English 23 Jun 89 p 1

[Article: "INSAT-1D Lag Hits Telelinks"]

[Text] THE TIMES OF INDIA News Service—Bangalore, June 22—The expansion of television and telecommunications will be badly affected with INSAT-1D not likely to be launched in the next three months.

The exact nature of the damage to the satellite at the launch pad of the Kennedy space centre at Cape Canaveral in the U.S. is still being assessed. However, the Indian space research organisation has already started working on contingency plans to maintain the services provided now by INSAT-1B and 1C.

The plans were reportedly discussed at an emergency meeting held here soon after the chairman of the space commission, Prof U.R. Rao, returned to the ISRO headquarters from Delhi yesterday.

Information reaching here said the multi-purpose satellite had suffered "repairable" damage when the hook of a crane used for mating the satellite with the Delta launch vehicle at the Kennedy centre hit the reflector of the satellite.

"The reflector can even be replaced. But unless the satellite is opened, we cannot get to know the extent of the damage. It is a possibility, a remote one, that something below the reflector could have been damaged. However, we are sure the satellite can be repaired," a source said.

An ISRO spokesman refuted a Reuter report from Cape Canaveral that the satellite was "heavily" damaged and that it would take "several months at the least" to get the satellite ready for the launch.

Another source said if the damage was confirmed to only the reflector, it would not take much time to repair it or replace it. If it was "something more" it would take more time to repair it. This could be more than three months.

The early launch and functioning of INSAT-1D has become crucial because the INSAT-1B's life of six years comes to an end by October. Originally, INSAT-1D was scheduled to be a link between the INSAT one and two series.

However, owing to the delay in the launch on INSAT-1B and the consequent delay in the launch of INSAT-1C, and the crippling of INSAT-1C's capacity by 50 per cent, INSAT-1D's success has assumed significance.

It is not only required to maintain the existing services provided by INSAT-1B, but also to augment INSAT-1C. In effect, programmes for the expansion of television and telecommunication networks and weather forecasting will be delayed.

Prof Rao had said in an interview to a magazine recently: "Everybody is worried. The life of INSAT-1B is coming to an end in October. We must have the INSAT-1D working in the position of INSAT-1B well before that because there is no other way we can maintain the services."

Scientists at ISRO are quite confident of handling the situation arising out of INSAT-1D not being launched in the next three months. "We will be able to manage the situation with the existing capacities of INSAT-1B and 1C," sources said.

Scientists are planning to get the life of the INSAT-1B extended beyond October. This could be quite a difficult exercise. But scientists are confident that it will be successful.

The other option being considered is utilising the capacity of the INSAT-1C to the maximum. Right now, INSAT-1C is not being fully utilised, although it has the capacity and a life span of about three years.

The user agencies, the information and broadcasting and telecommunications ministries, would have no other choice but to lease either the Intelsat or European satellites.

The Union government has also the choice of either utilising the services from the two satellites already in place either for television and telecommunication or for weather forecasting.

Television Stations To Be Linked to Arabsat

55500100 Bombay THE TIMES OF INDIA in English 30 Jun 89 p 19

[Article by S. Satyanarayanan: "Arabsat Satellite To Bail Out Indian TV"]

[Text] Bangalore, June 29: Television stations throughout the country are expected to be linked to a satellite belonging to Arabsat, the space consortium of group of Arab nations, by September 1, which will take over from the Indian Insat-1 B expected to go out of service by that time.

In a crucial breakthrough, the department of space (DoS) has finally concluded negotiations, which had been on for the past one year, with Arabsat for hiring transponder capacity aboard one of its satellites which will ensure continued television broadcast services throughout the country.

There had been considerable apprehension over replacement of Insat-1 B's services following the unexpected damage of Insat-1 D scheduled to be launched by a US launcher tomorrow and meant to take over from the ageing satellite.

According to top sources here at DoS, the entire television broadcast capacity currently available with Insat-1 B will be replaced by the Arabsat spacecraft. To ensure a smooth transition of services from one satellite to the other several experiments, they said, had already been carried out in the past few weeks. No major costs are expected to be incurred in additional equipment on ground for reception of broadcasts from the one satellite, and satellite dish antennae of suitable dimension have already been installed at the various reception centres.

The sources said that satellite capacity had been hired only for television broadcasts and the various telecommunication facilities in operation currently would be looked after by Insat-1 C, which has 50 per cent of its C-Band transponders required for the purpose intact. Meteorological services, too, they said would be taken care by Insat-1 C.

Apparently, DoS had been on the search for extra satellite transponder capacity from various international sources for the past two years as a contingency measure against any possible disruption of existing satellite capabilities due to unforeseen events. Efforts were speeded up a few months ago following the delay in the launch date of Insat-1 D and finally pressed home following the mishap at the launch pad at Cape Canaveral this month when a 'loose hoist crane' damaged the satellite, delaying its launch indefinitely.

Internationally there has been a severe shortage of satellite capacity owing to the series of failures of US and European launchers beginning with the Challenger disaster. As a result, there are a large number of satellites at present put in cold storage due to lack of launcher facility. Sources said that DoS had even approached the Soviet Union, which has a number of satellites capable of being used over the Indian subcontinent, but had been turned down again due to lack of capacity.

Plans To Quadruple Telecom Production by 1992 Told

55500103 Calcutta THE TELEGRAPH in English 5 Jun 89 p 5

[Article: "2 Million Phone Lines by 1992"]

[Excerpt] New Delhi, June 4 (UNI): Plans are on to quadruple the telecom production base in the country to about two million lines by 1992. This would be the scale of production required to reach the target of 20 million telephones by the turn of the century.

According to the Telecom Commission chairman, Mr Sam Pitroda, India had no capacity problem as far as telephone instruments were concerned. About Rs 90 crores had already been invested in this area to create an installed capacity of four million telephones a year, of which only about 500,000 instruments were being produced annually at present. All that needs to be done is to "energise" the manufacturers, he said.

Similarly, there is adequate capacity as far as cables are concerned and there would be no need for more plants. The existing plants may be asked to work three shifts instead of one as at present, Mr Pitroda said.

It is mainly in the area of switching and transmission equipment that production needs to be stepped up. The commission feels that the tremendous potential existing with the licences of C-DoT technology needs to be tapped.

Many state electronic corporations and some leading private sector firms, have capacities of 20,000 lines each, which could easily be raised to 50,000 if they work more shifts per day, Mr Pitroda said.

Mr Pitroda said 30 companies had between them the potential to produce about 1.5 million lines of cards a year. There were plans to set up plants in different parts of the country for testing and integration of these cards. Each of these plants is expected to cost about Rs 20 crores, he said.

[Passage omitted]

All District Headquarters Linked by Computer

55500099 Madras THE HINDU in English 2 Jul 89 p 3

[Text] Madras, July 1—The satellite-based national computer-communication network connecting district headquarters, State capitals and the Central Government has become operational in Tamil Nadu. Its first task is introduction of computerisation in the weekly monitoring of prices of paddy, rice, pulses and other commodities.

The work on the network, NICNET, began in the State in March last year and by January this year all the district headquarters were equipped with computers and other hardware, which in turn have been linked to the Secretariat here through satellite.

The system was made operational about a week ago, with introduction of computerisation in the monitoring of the prices of 37 commodities. Till now the work was done manually, resulting in long delays in the consolidation and analysis of a massive volume of data from the districts. Now it has become possible to make a quick appraisal of the district-wise trends in the prices of the commodities and take steps to bring down prices wherever they were ruling high.

PDS on network: Government sources told THE HINDU that monitoring of the public distribution system would next be brought under NICNET which has been set up by the National Informatics Centre. When that comes through it would become possible to have a close watch on the receipt of stocks at godowns, the storage position, as also the sales turnover of the 20,000 fair price shops in the State. Among other things, it would help in responding quickly to any public grievance about non-availability of commodities in the shops, as the monitoring would be detailed and cover each and every shop.

It is also proposed to collect information on availability of public land through NICNET to help the District Collectors in preventing encroachments and in allotting land to the weaker sections. A study team is now in Kancheepuram taluk to prepare the format.

The guiding philosophy for use of the network would be to ensure that development activities in the State were equitably distributed among the districts, the sources said. A recent study on investment for laying rural roads in the seventh Plan had showed that while some districts kept receiving largesses from the Government, others languished for want of adequate funds. The NICNET would be used to correct such imbalances in various fields of activity and see to it that just because development schemes worked well in some districts, they alone did not keep getting funds and encouragement from the Government, the sources added.

Minister Views TV, Radio Network Expansion Plan

Eight NewTransmitters

BK3107032689 Delhi Domestic Service in English 0240 GMT 31 Jul 89

[Text] The information and broadcasting minister, Mr H.K.L. Bhagat, says eight new low-power Doordarshan [television] transmitters will be set up in Rajasthan this year. Talking to newsmen in Jalore, Mr Bhagat says the target is to raise the radio broadcast to 24 hours and Doordarshan telecast to 18 hours daily. He said the number of programs production centers will go up to 49 from the present 19 during the 8th 5-year plan.

Low-Power Transmitter Inaugurated

BK0108021689 Delhi Doordarshan Television Network in English 1600 GMT 31 Jul 89

[Text] A low-power transmitter of Doordarshan [television] became operational in Jalor, Rajasthan yesterday. The information and broadcasting minister, Mr H.K.L. Bhagat, activated the transmitter by pressing a button. The union home minister, Mr Buta Singh, was also present on the occasion.

State Government Boycott of TV, Radio Criticized

BK0608042289 Delhi Domestic Service in English 0240 GMT 6 Aug 89

[Text] The West Bengal Pradesh [State] Congress-I president, Mr A.B.A. Ghani Khan Choudhury, has criticized

the left front government [of communist-ruled West Bengal State] for its decision to boycott Doordarshan [television] and All India Radio. In a statement in Calcutta, Mr Choudhury said the left front government's decision is a political stunt, and it is trying to dramatize the issue before the coming elections. He said about 80 percent of the news items in the local bulletins of the two electronic media is devoted to the state ministers and left front leaders.

Digital Network for Bangalore Planned

55500102 Calcutta THE TELEGRAPH in English 20 Jun 89 p 8

[Article: "Digital Network in Bangalore by Sept."]

[Text] Bangalore, June 19 (PTI): Bangalore will be the first Indian city to introduce integrated services digital network (ISDN), on an experimental basis, launching India into the new era of telematics.

Under the experiment, the pair of cables connected to a telephone set at homes will also be used to receive facsimile, teletext, video-text, electronic mail or data from data banks.

The Bangalore experiment is said to be a prelude to deployment of ISDN on a national scale. The project is being implemented by the electronics division, a unit of the Bharat Heavy Electricals Limited (BHEL) here in cooperation with the Centre for Development of Telematics (C-DoT).

Mr K. Srinivasmurty, deputy general manager of the electronics division, said the three digital telephone exchanges at Ulsoor, Malleswaram and central Bangalore will be interlinked to form the ISDN.

Initially some 50 subscribers connected to these three exchanges—mostly business people—will be included in the experiment. He said the project will be initiated in September this year with BHEL's electronics division providing all the equipment at the customer's end.

The customer can make telephone calls, get photos on the FAX machine and receive data and teletext on a video terminal—all these services coming from the same pair of telephone cable.

"It is like using the same electric wall socket for lamps, television set or a washing machine," Mr Murthy explained. The sharing of the telephone cable for multiple telecommunication services is the key feature of ISDN made possible by C-DoT's electronic switching systems, he said.

ISDN, which is expected to revolutionise telecommunications, is still under experiment the world over and very few cities offer such a service. No country has introduced ISDN on a national scale as yet.

Digitalisation is a prerequisite to introduction of ISDN and, according to Mr Murthy, C-DoT's indigenous digital technology in combination with BHEL's expertise in product development, "can make India self-reliant in this frontier area of telematics."

45 New FM Radio Stations Planned for Mar 1990

BK2807090989 Delhi Domestic Service in English 0830 GMT 28 Jul 89

[Text] All India Radio proposes to set up 45 new frequency modulated [FM] radio stations by March next year. The main advantage in this system of broadcast is that it gives better reception. The Rajya Sabha was informed in a written reply today that 35 medium wave transmitters and 16 short wave transmitters at existing centers are being upgraded.

IRAN

New TV Transmitter Commissioned in Qom

LD1707120189 Tehran Domestic Service in Persian 1030 GMT 17 Jul 89

[Text] The satellite television transmitter of the Halabestan District in Qom, which has been installed and made operational thanks to the efforts of the [staff of the] television transmitters' expansion unit of the Voice and Vision organization, was commissioned this morning in the presence of the technical deputy [managing director] of that organization.

According to a Central News Unit report, the television transmitter has a power output of 10w and 250w of radation power. It has been installed and made operational in the Halabestan District in Qom and brings the programs of the first network of the television of the Islamic Republic of Iran to 8,000 inhabitants of 21 villages in the district, who have so far been unable to receive television programs.

KUWAIT

Minister Describes New Telecommunications System

55004533 Kuwait ARAB TIMES in English 10 Jul 89 p 7

[Article: "Communications To Be Modernised; Speedier Services at Reduced Cost"]

[Text] The Minister of Communications 'Abdallah al-Sharhan has said that Kuwait is one of the first among a few countries to introduce communication-by-satellite system, and currently owns five ground stations, the first of which was built in Um-al-'Aysh in 1969.

The ministry is currently involved in preparations to implement a new communication system in two stages in 1991 and 1993. The introduction of new system falls in the framework of a number of new subscriber services introduced by the ministry in the field of telephone communication and postal services, the official told a local daily.

He said that incoming postal packages were subjected to intensive control for health, security, informational, customs and other considerations and called on all people to co-operate with the ministry to upgrade its services and optimise the level of performance.

Al-Sharhan pointed out that the ministry constantly developed its services and that underground communication grids were being installed with microwave connections to further support its international communications systems and further establish communicative relations with all countries of the world.

The minister said that the ministry is planning to implement a new communication system called the IDR, which will actively contribute to the accelerations of data communication between ground stations, and will upgrade the quality and performance of operating international communication systems, double the number of operating international communication circuits, optimise spatial communications, reduce communication-by-satellite cost, cut down the cost of international operator services, and upgrade all communication services in general.

The new edition of the 'yellow pages' will be ready before the end of this year and free copies will be distributed among subscribers.

To reduce pressure on the 101-operator service, subscribers are urged to utilise the directory.

Meanwhile, another local daily interviewed the ministry's undersecretary 'Abd-al-'Aziz al-Ayyub who emphasised that the ministry had no intention to specify the number of daily internal free telephone calls or levy charges on length of telephone conversations.

He ruled out that intention of unifying GCC telephone centrals or cancel imposed tariffs on inter-GCC calls, due to the huge returns collected by each country as charges on such calls.

Al-Ayyub said that the existing telephone communication grid is one of the best in the world, and that the fact that it is deeply laid underground prevents damage from local weather conditions, enhances its functional efficiency and increase its years of performance.

He said that the Civil Service Council agreed to recruiting Kuwaiti postmen on grade 7 instead of 8, and that the ministry has vacancies for 150 postmen in its five-year-plan. However, the official expressed doubts whether any Kuwaiti will apply for the job.

Al-Ayyub pointed out that the administrative development is in full progress at the ministry, stressing that the ministry is perhaps the only ministry in the government that is able to secure revenues, after covering all expenditures, in the amount of more than 30 million Kuwaiti Dinar. He added that the new ministry budget for the year 89/90 did not exceed 60.5 million Kuwaiti Dinar.

Authorities double-check telephone sets imported into the country to ensure that they conform to locally-approved standards and that they do not cause any interference with operating telephone systems. Any smuggled sets will eventually be detected and violators would have to face legal responsibility, the official said.

He reaffirmed that the ministry would notify the subscriber with outstanding telephone bills of its intention to disconnect their lines by mail by calling them on a number of occasions before the measure indicated was adopted.

The undersecretary said that the busy signal a caller to al-Shuwaykh area would at times get was because this central operated under heavy pressure which exceeded 150,000 calls per hour. This is the maximum number of calls that the computerised network at the central could accommodate.

He stressed the need for cooperation by the public to help reduce the number of unnecessary calls.

The ministry intends to develop the existing postal services, recruit Kuwaiti graduates in the ministry's various service fields and allocate one post box for each family.

The ministry is also considering further expansion of its telephone network, and within the next five-year-plan 25 lines will be allocated to every 100 persons. The current number of allocated lines is 15, nevertheless the percentage is considered among the highest in the world, al-Ayyub said.

New Telecommunications Tower Described

55004526 Kuwait ARAB TIMES in English 20 Jun 89 p 6

[Article by Fatima Ahmad]

[Text] When the 370 meter tall Telecommunications Tower project has been completed in 1991, residents will get a bird's eye view of Kuwait.

The ambitious project, now under construction in the heart of Kuwait City, will be the fifth tallest building in the world.

The tallest is the CN Tower (555 m) in Toronto, Canada, followed by the Sears Tower (443 m), World Trade Center (419 m) and the Empire State Building (381 m) in the US.

More than 1,000 people work around the clock to add one more foot to the already spiralling tower. Tucked away on the corner of Hilali Street and 'Abdallah al-Salim Street, the tower has now risen more than 220 meters above ground.

An engineering marvel, it was on the designing board for nearly 10 years. Designed by Swiss architects Elektro Art, it is 388 meters high, including an 18 meter foundation below ground.

The Telecommunications Center and Antenna Tower, being built at an estimated cost of KD25 million, is expected to expand communication links and become Kuwait's status symbol.

Dream

It has a capacity of 100,000 telephone lines, 5,000 telex lines, 25,000 mobile telephones and facilities to expand the overseas automatic dialing services.

It took over 10 years to make the dream a reality.

In 1979, planners studying demand for telecommunications links, proposed a new Antenna Tower, thus, laying the foundations for the present structure. It took years of research and painstaking work to get the project off the drawing board.

"Every aspect of construction was examined," explains deputy chief engineer Badir Khalid al-Qabandi of the Ministry of Public Works, which is supervising its construction.

Sinking

Can it withstand strong winds? What will be the effect of earthquakes? Will it crumble in the heat? These were some of the many questions asked and studied thoroughly while the project was still on the designing board. Experts at the University of Toronto studied, among other aspects, the effect of 200 kmph winds on such a structure in temperatures varying between 75o to 87o Centigrade, based on 20 years average.

Will it tumble down? "No chance. "Everything that could be, has been taken into consideration," says Qabandi.

"Technically, and from an engineering point of view, there is no reason for (the structure) to collapse," he asserted.

In recent weeks, construction of the ambitious tower had given rise to rumors that the "structure was sinking."

"It was expected to settle between 10 to 14 cms during construction; it has only settled 4 cms so far" explained project engineer Ahmad 'Arafat.

'Arafat said that the design features give leeway for the structure to settle diametrically. "When we build a structure the height and size of the tower, then this is expected," he explained.

What if it doesn't settle diametrically and tilts? This is diwaniya talk," says Qabandi, dismissing the question with a smile.

Its construction began in April 1987 and is expected to be completed by early 1991, perhaps, on time for the year's National Day celebration.

Trucks supply construction material to the worksite in the dead of night or the early hours of morning to avoid disrupting traffic.

"We cannot move so much raw material during the day; its just impossible," said Ahmad 'Arafat.

More than 50,000 tons of concrete will go into the structure of the tower and the main building. So far, over 20,000 cubic meters of concrete has been used. More than 3,000 tons of steel will be used at the rate of about 150 kgs per cubic meter.

Viewing

The complex is being built next to the Telecommunications Building. And as such, design features were incorporated to blend the old and the new. Split into the Antenna Tower and the main building, the circular antenna tower has an octagonal center with a ground level diameter of 22 meters, tapering to four meters at a height of 308 meters.

A public platform would enable visitors to see Kuwait from a height of between 144 and 160 meters. Other platforms would be at the levels of 221 m and 239 m. The concrete structure would be 308 m high. A steel antenna mast would be installed from this point to 370 m.

The tower foundation has three basement floors; the lowest of which would be used as water storage tanks. The external walls of the tower would be glazed aluminum with a bronze anodized finish; glazing will be with the sun-reflecting bronze colored glass. The tower is equipped with six lifts; with four located at niches in the outer perimeter of the tower. Two elevators would be for public use; and the rest for services.

"The elevators will travel at a speed of six meters per second," said 'Arafat.

The 11-story main building has been planned to include a bomb shelter in the basement; the adjacent public office building, linked with an underground tunnel with the main building, would contain telephone, telex and other services for public use.

Critics of the project say that the technology that would be installed would become obsolete by the time the communication links are established. Nevertheless, they do agree that it would substantially improve the expanding communications network enabling limitless contact with anyone in any corner of Kuwait.

The center is expected to act as a link-up of all ministries and defence facilities.

PAKISTAN

Domestic Satellite Station Inaugurated

BK2507090389 Karachi DAWN in English 13 Jul 89 p 10

[Text] Islamabad, July 12: A high-power domestic satellite station (DOMSAT) has been established at Gwadar at a cost of Rs [rupees] 250 million.

The DOMSAT project was completed by the engineers of Telephone and Telegraph [T&T] Department.

It has started working through intelsat satellite on Indian Ocean.

According to the T&T sources here on Gwadar, the remote area of Baluchistan province, has now been connected on N.W.D. [Network Dialing] network, with the installation of DOMSAT.

The code number for dialling Gwadar is 0204. It was formally inaugurated by the Secretary [of] Communication, Mr H.N. Akhtar on Tuesday [12 July].

SAUDI ARABIA

Satellite Receiving Station Described

55004531 Jeddah ARAB NEWS in English 24 Jun 89 p 2

[Article by Javid Hassan: "Three Satellites Tracked at a Time; 60 Scientists Work at Remote Sensing Center"]

[Text] Riyadh, June 23—The Saudi Center for Remote Sensing, said to be the only receiving station in the world with the capability to simultaneously track, receive and record three satellites, is run and maintained by highly qualified Saudi scientists, according to Dr. Muhammad Tarabzuni, director of the center, which is a division of the King 'Abd-al-'Aziz City for Science and Technology (KACST).

Speaking to newsmen at the center's receiving station, he said 60 Saudi scientists and specialists have been working at the center following a 16-week training in the United States on the operation and maintenance and the applications of remote sensing, in line with the Kingdom's objectives to use space technology for peaceful purposes.

Within the framework KACST began in 1985 the construction of a receiving station for tracking and recording data from earth observation satellites. It reached its first milestone in January 1987 when it began receiving data from the American satellite LANDSAT 4 & 5 and subsequently the meteorological satellite Nova 9 & 10 (also American).

A new milestone was achieved last week when KACST signed an agreement with SPOT, the French satellite, for receiving images potentially useful to the Kingdom in exploring geological and mineral resources as well as in its search for boosting agricultural production and as a tool in urban planning, the production of geological, agricultural and other thematic maps.

What sets off the remote sensing station from others of its kind, according to Dr. Tarabzuni, is its possession of three antennae, two of which are of ten-meter diameter, which track two satellites simultaneously and automatically 24 hours a day on the S and X band frequencies. The third antenna, which is of 3.7 diameter, tracks Nova 9 & 10 and supplies the relevant Saudi ministries with all types of data on clouds, formation, biomass, geological and geomorphological data useful to the planners.

All the three antennae have a track area of 25 million square kilometers with their center in Riyadh, which has a radius of 2,800 kms. Thus their tracking field ranges from Bombay in the east to Benghazi (Libya) in the west, and from the Caspian Sea across the Soviet Union in the north to the northern part of Kenya in the south.

Dr. Tarabzuni said that images received from the three satellites are in different modes. LANDSAT-5 communicates in two modes—MSS (multi-spectral scanner) with 80-meter resolution and TM (thematic mapping) with 30-meter resolution. Images received from SPOT are in two other modes—MLA (multi-linear array) with 20-meter resolution and PLA (Panometric linear array) with 10-meter resolution. "What this means is that the satellites can perceive objects with sizes varying from 80, 30, 20 and 10 meters and relay data from an altitude of 704 kilometers for LANDSAT and 800 kms for SPOT."

He said the setting up of the receiving station became necessary in view of the lack of a reliable communications system on board the spacecraft in the past with sometimes non-performing recorders of restoring and relaying the data to the ground stations.

Thanks to the receiving station, the Kingdom produced its own geological map, while other ministries have benefited immensely from the data concerning agriculture and water resources as well as desertification.

Ventures of Saudi Cable Company Described

55004530 Dubayy GULF NEWS in English 13 Jun 89 p 11

[Article: "Saudi Cable Holds Promise"]

[Text] Saudi Cable Co., (SCC), the largest private industrial complex in the Arab world, went public on September 3, last year, through a ministerial decree.

The company, established in 1975 with a capital of Sr. 3.5 million, now has a capital of Sr. 270 million and 988 shareholders consisting of Saudi Arabian and other GCC nationals.

SCC comprises a group of companies in Saudi Arabia, Bahrain and Turkey. It has five operational factories in the industrial complex at Jeddah, three in Turkey and a 50 percent owned aluminium factory in Bahrain. The factories produce power cables, building wires, specialty

cables, copper rods, poly-vinyl chloride (PVC), insulation compounds, wooden reels and pallets and telephone cables.

The SCC factory in Bahrain, Midal Cables, supplies SCC's requirement of aluminium rods, while the Turkish company, Mass Holding owns 88 percent of three factories producing power cables, specialty wires and cables and telephone cables, through its Mass Cables Co. Turkey has been chosen as an area for industrial investment as it is centrally located for exports to Europe, Asia and the Middle East. it also has the advantage of export to Iraq and Iran, as they commence reconstruction of their war-ravaged economies, by having a common border with them.

SCC's market share in Saudi Arabia is about 75 percent. Its exports have reached 22 countries, including to U.S. and Japan. Exports have risen from Sr. 20 million in 1984 to over Sr. 220 million by the end of last year. Local sales in 1988 were put at Sr. 486 million. Collectively, SCC group of companies has a production capacity of over Sr. 1200 million and a total workforce of 1,500 trained and technically qualified workers, engineers and professional managers. 'Umar H Khalifati, President and Managing Director of SCC, said the future growth of the company is promising. He said, having established an engineering industrial base, SCC is embarking on a large scale project for the production of primary aluminium.

With the completion of its telephone cable manufacturing plant, SCC is negotiating expansion to manufacture fibre optic cables. Khalifati said that studies will be undertaken shortly to ascertain the requirements for building an electronics assembly plant to manufacture electronic apparatus for telecommunications and devices for defence systems.

Khalifati said that SCC has an active research and development programme that not only focuses on technical and product development, but also searches for areas for expanding productive capacities and building of new facilities. In order to market its products, SCC established Saudi Cable Co for Marketing (SCCM), which will market the group's products internationally.

Science City Signs Agreement With French

55004529 Jeddah ARAB NEWS in English 22 Jun 89 p 2

[Article by Javid Hassan]

[Text] Riyadh, June 21—King 'Abd-al-'Aziz City for Science and Technology (KACST) and the French company, SPOT Image, have signed an agreement that will enable KACST to receive images directly from the French Satellite Pour Observation Terra (SPOT), or the satellite for earth observation, at the KACST receiving station in Riyadh.

The scope and implications of the agreement were spelled out Monday night at a reception held at the residence of French Ambassador Jacques Berniere in the Diplomatic Quarter here. Dr Salih al-Athl, president of KACST who signed the agreement, and Gerard Brachet, chairman, SPOT Image, the co-signatory were present. Other invitees included Dominique Lapeyre de Chavardes, commercial director of the space company, Dr Muhammad Tarabzuni, director of space department at KACST, officials from both sides and members of the French Embassy staff.

Saudi Arabia is now the only country in the Middle East receiving SPOT images directly at its own facility, where transmissions from the American Landsat-5 satellite are also recorded. Together with SPOT such images are expected to go a long way in facilitating the Kingdom's search for oil and minerals exploration, helping agriculture, producing geological and other types of maps, and aiding urban planning.

Elaborating on the advantages of SPOT imagery. Brachet said one of these will be the receiving of high resolution pictures useful for mapping or urban planning requiring sharp details. "Another interesting possibility is that the satellite can take pictures not only vertically but also at an angle. By combining these pictures we can produce the stereoscopic or three-dimensional pictures. And by taking the geometric property of these images we can compute the elevation of the terrain," Brachet explained.

Asked about the rate of transmission of the images, Brachet said it is 50 megabits per second, or two images every nine seconds covering an area of 60 square kilometers. It is a continuous transmission covering not only Saudi Arabia but also a vast area around it including India, Bangladesh, the Middle East and North Africa. The spacecraft goes from north to south 14 times a day overflying various segments of the earth. It also overflies the same point every 26th day enabling KACST scientists to monitor environmental or geomorphological changes.

"From Riyadh they can receive images when SPOT is within a radius of 1,600 kms from the capital. It is then that the KACST station can receive the signal via its antennas and record the information." Dr Athl said that though the data from SPOT is meant primarily for Saudi Arabia, other neighboring countries could purchase the photographs relevant to their needs from KACST.

SPOT, which was lofted into space by the Ariane rocket in February 1986, is essentially a French program with the active collaboration of Belgium and Sweden. SPOT-1 has already traveled over 475 million kms transmitting 625,000 pictures to receiving stations in Toulose (France), Kiruna (Sweden), Prince Albert and Gatineau (Canada), Maspalomas (Spain) and Hyderabad (India).

"We have signed agreements with India, Pakistan, Brazil, Canada, Thailand and Japan similar to the one which we signed with KACST today," Brachet said, adding: "There's a strong interest among the Gulf states which want to use SPOT images in oil prospecting. Many petroleum companies also buy photographs from us as an aid to their prospecting program."

CANADA

Plans To Launch Radarsat Satellite by 1994 Discussed

55200049 Toronto THE TORONTO STAR in English 10 Jul 89 pp A1, A20

[Article by Val Sears: "Canadian Satellite To Keep Eye on Earth's Riches"]

[Text] Ottawa—Canada is going to put an eye in the sky that will offer the world an awesome view of our planet and its riches.

The program to launch Radarsat will be announced later this summer, a $441 million project shared among the provinces, the federal government and the private sector.

When the gilded satellite with its solar wings is aloft in 1994 it will be able to tell us about minerals in the Arctic, forest devastation in the Amazon, ship movements in the Atlantic, crop failures in the Soviet Union, floods in China and the height of ocean waves on the approach to Halifax.

Radarsat can do this day or night, through clouds, from pole to pole covering the whole of the Earth.

It will put Canada in the forefront of remote sensing, an exploratory and mapping technique that scientists say is vital in a country as huge as Canada and valuable to the rest of the world.

"There will be other radar-equipped satellites launched by the European Community and Japan," says Mac Evans in the space division of the department of industry, science and technology, "but none as sophisticated as ours."

The first two experimental radar birds aloft have a life span of only two years. Radarsat will last five years, will be uniquely steerable and will have a "zoom lens" to enable its sensors to scour the Earth in various dimensions.

The outstanding feature of the satellite is a synthetic aperture radar (SAR), a powerful microwave instrument that can transmit and receive signals that "see" through clouds and darkness.

From almost 800 kilometres (500 miles) above the Earth, radarsat will circle the planet from pole to pole in 500-kilometre (300-mile) paths, producing high-resolution images of the Earth's lands and oceans.

Because it can measure moisture content, it can be used to evaluate soil conditions, crops and forest changes. Its sensitivity to rock structure and roughness of the Earth's surface will help identify mineral and oil formations.

It can track ice movements, dramatically assisting in northern ship navigation and its measurement of waves and wind will assist weather forecasts, fishing and marine biology. The satellite will cover most of Canada every 72 hours and the Arctic every 24 hours. Processed and interpreted data will be available a few hours after each pass.

"Canada should be a leader in the world market for radar data into the 21st century," says the science ministry, adding this is "a notable achievement because that market is expected to account for 30 per cent of worldwide space business by the year 2000."

Scientists criticized

The announcement of the new satellite will come at a time when Canada's space agency is in turmoil, with hundreds of its Ottawa-based scientists balking at a move to a Montreal suburb where the agency headquarters is to be located.

Both Quebec Premier Robert Bourassa and Prime Minister Brian Mulroney have dumped on the scientists for resenting the move.

Bourassa said they were "so narrow in cultural matters that you have to question their professional competence."

But Mulroney, after hinting that the scientists and engineers lacked patriotism, has moved to tone down his rhetoric and says he regrets that his remarks were misconstrued.

The Prime Minister has also given prominence to the space program and promised to "ensure regional fairness" when handing out some $3 billion in space contracts over the next decade.

While Spar Aerospace of Montreal has the prime Radarsat contract, high-tech companies from MacDonald Dettwiler in British Columbia to Fleet Industries in Ontario will be important partners.

Mulroney said recently that a joint federal-provincial announcement on the Radarsat program will be made shortly, "representing a major research and development activity ... that will be at the leading edge of remote sensing technology."

But officials are having trouble orchestrating the ceremonial announcement with so many governments, agencies and politicians involved.

"There will likely have to be a series of fanfares," said one bureaucrat, "one for each part of the country."

After years of wrangling about the kind and expense of space investment, every agency, corporate president and politician wants a piece of the Radarsat glory.

Investors have been divided into two types: those who are paying to receive data and those who want a slice of the industrial pie.

And while the defence department is not investing, there are some important intelligence implications from the satellite data. It will be possible, for instance, to evaluate

food production in various parts of the world, and effort that has a direct effect on the level of military expenditures.

The United States has agreed to launch the satellite in return for a share of its data.

Technical Snags Delay Anik E Satellite Launch

55200050 Ottawa THE OTTAWA CITIZEN in English 21 Jul 89 p B11

[Article by Mike Urlocker: "Technical Snags Delay Anik E Launch"]

[Text] Telesat Canada, the country's only satellite operator, is delaying the launch of its new generation of satellites by seven months because of technical problems.

Harry Kowalik, vice-president of space systems, said suppliers have had trouble developing new solid state amplifiers and the orbital motors for the $600-million project.

"Things never run smoothly in these projects, just like anything else," said Kowalik.

The new launch dates for the twin satellites, named Anik E1 and E2, will free up the schedule in case other problems develop in testing and assembly, said Kowalik.

Ottawa-based Telesat is jointly owned by the federal government and the major telephone companies. The company owns and operates five satellites which carry most national television broadcasts and long distance telephone traffic.

Telesat and its major customers are not bothered by the delays, but the problems could amount to millions for Toronto-based Spar Aerospace Ltd., the prime contractor for satellite construction.

Spar, which is building the communications systems and has subcontracted the construction of the spacecraft, including motors, could lose up to $4 million through penalties and increased costs to complete its $200-million contract with Telesat, said Thomas Law, an analyst with Nesbitt Thomson Deacon Inc. in Montreal.

Officials with Spar refused to comment on the cause of the delays or the costs involved, but the company's recent annual report blamed an unnamed "major subcontractor" for the problems.

Major components of the first satellite are currently being tested at the government-run David Florida Laboratory in Ottawa, but the motor is still under development by U.S.-based TRW Systems, said Kowalik.

Anik E1 is now scheduled for launch aboard the French space shuttle *Ariane* in late 1990. The second satellite is set to go up in the spring of 1991.

The new Aniks, to be the world's largest domestic communications satellites, are to replace two of the company's aging satellites, both due out of orbit at the end of 1990.

Kowalik and other Telesat officials said no disruption of service is expected from the delays because the older satellites can operate for up to six months longer than scheduled before they run out of fuel.

Don Braden, executive director of the newly-formed Canadian Satellite Users Association, which represents most television broadcasters, said his group is not worried.

"People are a little bit concerned that there's slippage, but it's not a serious problem," said Braden.

TORONTO STAR Editorial on Contradictory Signals for CBC

55200051 Toronto THE TORONTO STAR in English 27 Jun 89 p A16

[Article: "Scrambled Signals for CBC Network"]

[Text] In its hour of need, the cash-starved Canadian Broadcasting Corporation has been left dangling.

Contradictory edicts from the Progressive Conservative government have alternately built up the CBC's mandate for public television and radio, then stripped the corporation of the money it needs to do the job.

The cabinet has charted new directions for the CBC, while creating a management vacuum by leaving top jobs unfilled. And it has paid lip-service to cultural sovereignty, while undermining our cultural cornerstone:

—Last year, the Tories blithely instructed the CBC to aim for 95 per cent Canadian content during prime time. This year, they decided to slash the corporation's budget by $140 million over five years.

—Last year, the government introduced the first revisions to the Broadcast Act in 20 years and urged speedy passage. This year, it put the changes on the parliamentary back burner.

—Last year, Ottawa planned to split the job of CBC head into two, creating a separate presidency and chairmanship. This year, it allowed those jobs to go vacant, along with nearly half the seats on its board of directors.

With neglect compounded by nastiness, the government has forced the publicly owned network to languish in leadership limbo. Now, Communications Minister Marcel Masse is considering an even more ominous strategy.

In addition to splitting the CBC's top job into two, he wants to divide it into *four* positions—separate French and English presidents, along with separate French and English chairmen.

After losing more than 1,500 employees to budget cuts in the last five years, the CBC would gain four separate layers of top-heavy bureaucracy in the executive suites.

In so doing, Canada's national broadcasting service, whose mandate is to bring the country together, would itself break apart into two linguistic solitudes.

It's a wrongheaded strategy that runs counter to recent trends within the CBC toward French-English drama co-productions and cost-shared, bilingual news bureaus abroad.

It fits in with a Tory view of Canada that relies heavily on the rhetoric of nation-building, but leads down the road of *deux nations*. Such a divide-and-conquer strategy can only weaken the CBC as an instrument of national unity.

FRANCE

Agency for Worldwide TV Broadcasting Created

LD2707090289 Paris Domestic Service in French 1100 GMT 26 Jul 89

[Summary] Until now France has not been too successful in making an impact on the international audiovisual market, as it is subject to fierce competition from the Anglo-Saxons and to a lesser extent from the Asians. France's near-absence in this field is due first to a lack of coordination, but we have perhaps now found someone to coordinate France's television activity abroad—Alain Decaux, minister in charge of Francophone affairs, who has just presented a series of proposals to the Cabinet.

Alan Decaux says he was asked by Michel Rocard on 18 March to look into this matter; and his proposals were accepted by the Cabinet this morning. He has proposed the setting up of a Council for Audiovisual Affairs Outside France [Counseil de L'Audiovisuel Exterieur de la France—CAEF]. The prime minister will chair the council, composed of four ministers—the ministers of foreign affairs, cooperation, communications, and economy and finance. The CAEF is going to meet five times a year and will define and direct French television activity. It will make the major decisions, which will then be executed on the ground through the SOFIRAD [expansion unknown] in association with all the public-service television companies. Its aim is to create throughout the world a world bank of images so that within 5 years the whole globe can be covered by French-language programs.

Since 15 May, Canal France International has been broadcasting television programs to Africa, under a project set up by the Cooperation Ministry. Now sets of television broadcasts are going to be extended to cover all the continents.

The first meeting of the CAEF will be held at the beginning of September.

SWEDEN

Mobile Phone System Test for Rural Areas

55002476 Stockholm DAGENS NYHETER in Swedish 16 Jul 89 p 6

[Text] A mobile telephone system for the really sparsely populated areas is being tested by the Telecommunications Agency [Televerket] in the Ostersund Telecommunications district. If the trial goes well, this model may become permanent for all of Norrland. This trial is part of the Telecommunications Agency's study of rural telecommunications. The mobile phone is permanently installed in a locked box, which is connected with an ordinary telephone via a jack. However, it is doubtful if this arrangement can be employed in an area such as the Stockholm Archipelago, where it is expensive to extend lines. This is partly because of the high density of the mobile phone net in the area, SUNDVALLS TIDNING states.

Ericsson Receives Mobile Phone System Order From Kuwait

55002474 Stockholm DAGENS NYHETER in Swedish 8 Jul 89 p 12

[Text] Ericsson has received an order from Kuwait for delivery of a mobile phone system. The order is worth 290 million kronor. The system in its first stage will be able to serve 20,000 customers, but the capacity is 50,000. Ericsson has delivered systems previously to Saudi-Arabia, Oman, and the United Arab Emirates.

UNITED KINGDOM

Marconi Produces First European Ultrawideband Microwave Link

MI890319 Coburg OPTO ELEKTRONIK MAGAZIN in English Vol 5 No 2, Mar 89 pp 205-206

[Text] Europe's first ultrawideband fiber-optic microwave link has been produced by Marconi's Electro-Optics Division at Stanmore, Middlesex.

The company has successfully demonstrated a 2-20 GHz optical fiber-optic transmission line of 1 km length, a new technology offering vastly superior bandwidth and insertion loss compared with existing coaxial cable or waveguides. It also gives immunity to electrical interference.

Bandwidth capability is equivalent to 3,000 television channels or six million telephone conversations transmitted simultaneously down a single strand of optical fiber.

In addition, man optical carriers can be multiplexed down the same fiber—with good isolation—using slightly different wavelengths. This significantly increases the information handling capability of the transmission link.

The link differs from existing telecommunications links—which are much narrower bandwidth—in its use of an external modulator to impose the information on the optical carrier. The electro-optic modulator has been specially developed at the GEC-Marconi Research Center and alleviates many problems encountered with directly modulated semiconductor lasers, providing higher fidelity transmission.

There are additional advantages in size and mass over conventional copper wire cables.

Typically, a single optical fiber is only one-eighth of a millimeter in diameter. Therefore many can be carried in an underground cable of, for example, 25 millimeters diameter.

The system's wide bandwidth is the ideal solution to such needs as signaling to and from remote antennas, and data transmission in direct broadcast from satellites or high definition television.

New Measures to Spur Telecom Company Competition

55500108 London THE DAILY TELEGRAPH in English 16 Jun 89 p 25

[Text] New measures aimed at introducing more competition for British Telecom and Mercury by allowing companies to sell spare capacity on their telephone networks were announced yesterday by Lord Young, Trade and Industry Secretary.

He accepted recommendations made by Sir Bryan Carsberg, director-general of Telecommunications, to end restrictions on companies leasing lines from selling spare capacity.

The relaxation means that users will have considerably greater freedom in the use of private circuits to increase revenue.

It also opens the way for "brokers" to set up in business to lease a circuit and offer a service between two cities at a rate that undercuts BT and Mercury.

Companies will also able to combine their private network systems to get better use out of them as well as using spare capacity instead of being limited to a single set-up.

The reforms are not expected to make anything but a minor dent in the BT and Mercury business, although government officials feel it could result in the loss of "several million pounds of business."

Internationally-leased private circuits will not be affected by the change but Lord Young hopes the change will provide a stimulus for companies to make better use of their telecommunications networks.

Other changes in yesterday's package include simplification of fair trading rules which remove unnecessary burdens, measures to deter "nuisance" calls from salesmen, greater flexibility for installers of call routing equipment and a requirement to instal systems in lifts to boost emergency phones for hearing aid wearers.

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